

# THE JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY

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## Cover Photographs

*Left:* From *Modified In Vivo Lung Perfusion Allows for Prolonged Perfusion Without Acute Lung Injury*. Perfusion circuit. The perfusate is circulated by a centrifugal pump passing through a membrane gas exchanger, which receives a combination of gas (oxygen, 6%; carbon dioxide, 8%; and nitrogen, 86%) to deoxygenate the perfusate and provide CO<sub>2</sub> for the inflow. Flow is then directed to a leukocyte filter and enters the lung through the left pulmonary artery. The temperature of the perfusate is maintained using a heat exchanger, which is connected to the membrane gas exchanger. Pulmonary artery flow is controlled by the centrifugal pump and measured using an electromagnetic flow meter. The outflow perfusate returns through the left pulmonary veins to a hard-shell reservoir, and the height of this reservoir is adjusted to have the drainage pressure within the appropriate range. Catheters in the left pulmonary artery and in the left lower vein measure PA and LA

pressures, respectively. A standard intensive care unit (ICU) ventilator provides ventilation to the lungs.

*Center:* From *Treatment Strategies for Left Subclavian Artery During Total Arch Replacement Combined With Stented Elephant Trunk Implantation*. *Left*, The stented graft (Shanghai MicroPort Medical Co, Ltd, Shanghai, China). *Right*, The 4-branch artificial vessel (Datascope Co, Montvale, NJ).

*Right:* From *Evolving Strategies for Preserving the Pulmonary Valve During Early Repair of Tetralogy of Fallot: Mid-Term Results*. Cartoon showing the balloon dilation technique: A, Protective commissurotomy; B, B', balloon dilation of the pulmonary valve annulus; C, C', status after balloon dilation showing the gap of pulmonary valve tissue after the dilation procedure; D, D', leaflet delamination procedure (to increase the pulmonary valve coaptation surface); E, resuspension plasty (to avoid leaflet prolapse).